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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/717,437

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Stephen A. Boppart

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EXAMINER

LAMPRECHT, JOEL

ART UNIT

PAPER NUMBER

3737

MAIL DATE

DELIVERY MODE

01/22/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/717,437	Applicant(s) BOPPART ET AL.	
	Examiner JOEL M. LAMPRECHT	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-37 and 40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-37 and 40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 3, 4, 8, 10, 12, 14, 22-24, 29, 31, 33, 35, and 40 are rejected under 35

U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims do not produce a useful, tangible, concrete result.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 1, 3-37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izatt et al (US 6,002,480) in view of Faris (US 5,451,785). Izatt et al disclose a method for examining a sample comprising exposing a reference to a set of radiation to receive data from that reference (Col 5 Line 1-Col 6 Line 20), expose a sample to radiation to receive data from that sample (Col 6 Line 20 – Col 6 Line 50), interfering the received data which is of a different frequency than the transmitted radiation (Col 2 Line 35-65, Col 7 Line 55- Col 9 Line 65, Col 12 Line 16 – Col 16 Line 20, Col 18 Line 35- Col 19 Line 53, Col 10 Line 29 - Line 45)). The detection mechanisms detect the interfered photons which can be stokes or anti-stokes photons (Col 28 Line 5- Col 29 Line 50), the data sets are combined into an image (Col 6 Line 10-20), and the electromagnetic radiation the sample and reference are exposed to is within the frequency range of infra-red to ultraviolet light (Col 10 Line 29-33), can be Raman in nature (Col 31 Line 15-Col 33 Line 30), and is done by optical coherence tomography (Col 3 Line 20-55). The sample can be of a tissue inside a patient (Claim 7). The reference radiation is exposed to a reference before the interference with the sample radiation (Col 5 Line 50-Col 6 Line 20, Col 18 Line 35 – Col 20 Line 20), and the wavelengths of the collect radiation are different from that of the electromagnetic radiation that to which the sample is exposed (Col 19 Line 5-53, Col 2 Line 65- Col 3 Line 20, Col 7 Line 44- Col 8 line 60, Col 11 line 50 – Col 12 Line 55). At least a portion of the received radiation from the sample is of the same frequency as that of the reference and the sent electromagnetic radiations to both the reference and sample are phase-coherent (Col 28 Line 5 – Col 29 Line 50). Still further the device comprises an

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oscillator (pulsed pump laser) (Fig 5), a reference generator (Col 27 Line 5- Col 28 Line 4), illuminator (Col 27 Line 24 - Line 42), a demodulator coupled to the other devices (Col 26 Line 40 – Col 27 Line 4), a recording device (Col 5 Line 60- Col 6 line 20), and frequency-selecting elements to filter the light (Col 9 Line 60-Col 10 Line 45, Col 7 Line 50 – Col 8 Line 55). A scanner is also coupled to the device (Col 5 Line 50-Col 6 Line 20).

Although Izatt et al acknowledge that non-ideal mirrors will shift the frequency of a response at least some amount and the return frequency will therefore differ at least some from a true or ideal reflection (See Col 8 Line 45-55 and Col 7 Line 30-42) it is not the intention of Izatt et al to receive different frequency radiation from the reference. Therefore attention is paid to the secondary reference in the same area of endeavor by Faris which discloses the use of a scattered reference for the purpose of selectively gating portions of an imaging beam, using either a dichroic mirror, moving prism, and shifting delay times (Col 5 line 10 - Col 6 Line 20). Faris continues to use an interfering of reference and sample radiation and frequency mixing (Col 6 Line 19-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the methods of Faris with those of Izatt et al for the purpose of forming the most accurate transilluminated images of a sample or patient (Abstract).

Response to Arguments

Applicant's arguments filed 10/27/08 have been fully considered but they are not persuasive. As cited above, the Faris reference is referenced for the purpose of providing reference data which is at a frequency different than that of the transmitted

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frequency (including a prism). Raman, or inelastic scattering of light thereby yields a response or reflected light at a frequency which is different than that of the transmission.

Regarding the argument that the Faris reference is incompatible with the Izatt et al reference, Examiner notes that only a small portion of the disclosure of Faris is relied upon, and additionally, that the Faris reference is indeed analogous art, though some of the methods obviously do vary from that of Izatt et al. Faris provides for interfering of data received at a different frequency than that which is transmitted to a reference arm. The interference of such data would be desirable to persons undergoing a Raman scattering in their sample, because the interfering would then be of the same type as the sample radiation. Both references use analogous technology and principles essential to OCT, and knowledge of the reference methods of Faris in the system and methods of Izatt et al is what is being relied upon as the basis for the combination.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOEL M. LAMPRECHT whose telephone number is (571)272-3250. The examiner can normally be reached on 8:30-5:00 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ruth S. Smith/
Primary Examiner, Art Unit 3737

JML